

## CLAIMS

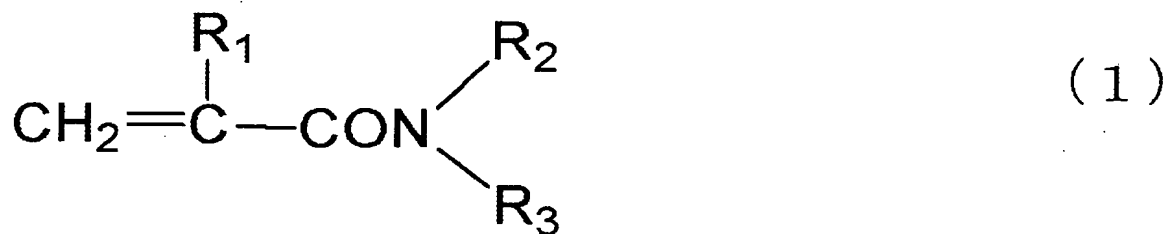
- [1] A lithographic printing original plate having a photosensitive layer formed on a support, wherein the surface of the photosensitive layer forms a phase-separation structure, and when the lithographic printing original plate is subjected to printing using a fountain solution, a portion derived from either one of the components that constitute the phase-separation on the surface of the printing plate after printing produces recessed parts on the surface of the photosensitive layer and the surface of the photosensitive layer has a property to be changed to have affinity for ink by irradiation with light or thermal energy.
- [2] A lithographic printing original plate according to claim 1, wherein the phase-separation structure is in a sea-island form, there are at least five island portions having a diameter of 0.5  $\mu\text{m}$  or more to 10  $\mu\text{m}$  or less in an area of 2,500  $\mu\text{m}^2$  on any surface of the photosensitive layer, wherein the diameter means a short axis when the island portion has an elliptic shape with a long axis and a short axis, and at least a part of the island portions produces recessed parts on the surface of the lithographic printing original plate after printing when the plate is subjected to

printing using a fountain solution.

[3] A lithographic printing original plate according to claim 2, wherein the mean value of the short axes of the island portions  
5 is 0.5  $\mu\text{m}$  or more to 10  $\mu\text{m}$  or less.

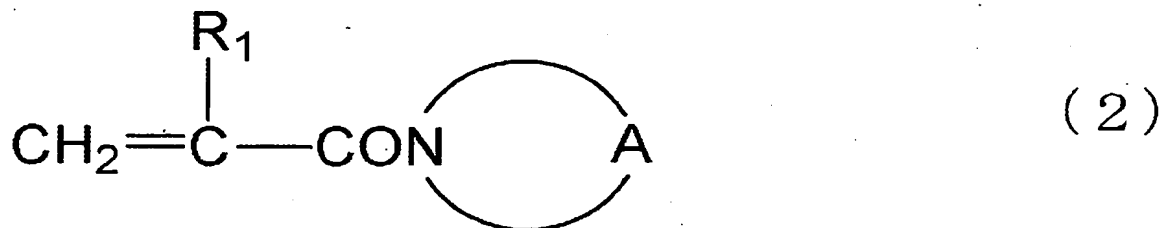
[4] A lithographic printing original plate according to claim 1, wherein the photosensitive layer contains a hydrophilic resin, and the hydrophilic resin contains a hydrophilic resin that is  
10 obtained by reacting at least a N-alkyl or N-alkylene substituted (meth)acrylamide compound represented by following general formula (1) and/or (2):

[formula 1]



15 , wherein  $\text{R}_1$  represents a hydrogen atom or a methyl group;  $\text{R}_2$  and  $\text{R}_3$  represent a hydrogen atom or a lower alkyl or alkoxy group.

[formula 2]

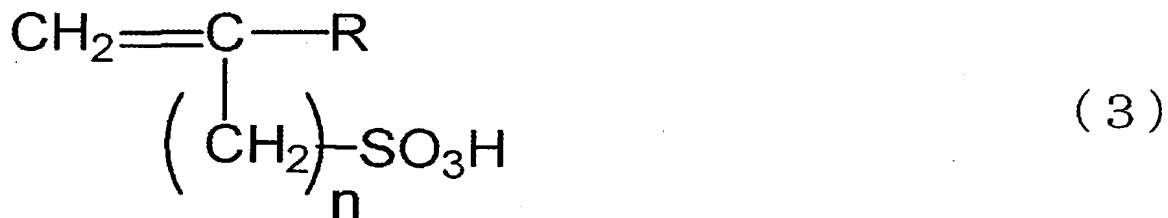


, wherein  $\text{R}_1$  represents a hydrogen atom or a methyl group; A represents  $(\text{CH}_2)_n$ , wherein n represents an integer of 4 to 6 or  $(\text{CH}_2)_2\text{O}(\text{CH}_2)_2$ .

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[5] A lithographic printing original plate according to claim 4, wherein the hydrophilic resin is obtained by reacting further one or more kinds of compounds selected from the compounds having following general formula (3) and/or salts thereof:

10 [formula 3]



, wherein, R represents a hydrogen atom or a lower alkyl group; n represents an integer of 1 to 8.

15 [6] A lithographic printing original plate according to claim 1, wherein the photosensitive layer is obtained by cross-linking a photosensitive resin composition containing a hydrophilic resin

having cross-linking groups capable of reacting with at least a cross-linking agent, a cross-linking agent, and a photothermal conversion material.

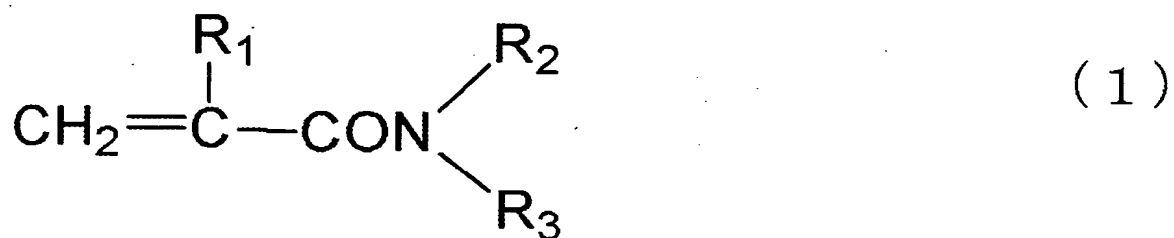
5 [7] A lithographic printing original plate according to claim 1, wherein the photosensitive layer is obtained by cross-linking a photosensitive resin composition containing a hydrophilic resin having cross-linking groups capable of reacting with at least a cross-linking agent, a cross-linking agent, organic fine  
10 particles, and a photothermal conversion material.

[8] A lithographic printing plate that is obtained by irradiation with light or thermal energy to the lithographic printing original plate according to claim 1.

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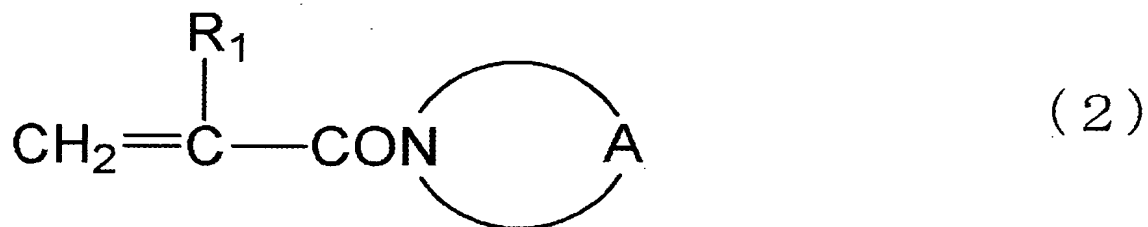
[9] A photosensitive resin composition containing a hydrophilic resin obtained by reacting a N-alkyl or N-alkylene substituted (meth)acrylamide compound represented by following general formula (1) and/or (2) and a hydrophilic resin having cross-linking  
20 groups that react with at least a cross-linking agent, which further contains a cross-linking agent and a photothermal conversion material.

[formula 4]



, wherein,  $\text{R}_1$  represents a hydrogen atom or a methyl group;  $\text{R}_2$  and  $\text{R}_3$  represent a hydrogen atom or a lower alkyl or a lower alkoxy group.

5 [formula 5]



wherein,  $\text{R}_1$  represents a hydrogen atom or a methyl group; A represents  $(\text{CH}_2)_n$ , wherein n represent an integer of 4 to 6 or  $(\text{CH}_2)_2\text{O}(\text{CH}_2)_2$ .

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[10] A photosensitive resin composition according to claim 9, which further contains organic fine particles.